

# **IMPLEMENTATION REPORT OF THE NATIONAL PROGRAMME FOR THE MANAGEMENT OF SNF AND RAW IN THE SR ON 31 DECEMBER, 2020**

## **1. Introduction**

The National Programme for the Management of Spent Nuclear Fuel and Radioactive Waste (hereinafter referred to as „National Programme“), approved by the Government of the Slovak Republic by the Decree No. 387 of July 8, 2015, has been sent to the European Commission pursuant to the Directive 2011/70/EURATOM in August 2015. Therefore, it has become a strategic document for the Final Stage of the Peaceful Use of Nuclear Energy in the SR. Pursuant to § 6 section 9 of the Act No. 308/2018 Coll. on the National Nuclear Fund, the Board of the Governors of the NJF shall develop jointly with JAVYS, a. s. (legal entity pursuant to § 3 section 9 of the Atomic Act) and holders of authorization or permission of the Nuclear Regulatory Authority of the Slovak Republic (§ 5 section. 3 and § 8 section 3 of the Atomic Act) the Report on Implementation of the National Programme for the preceding year annually. The Board shall submit it to the Ministry of Economy of the SR for approval, supplemented by the Opinion of the Nuclear Regulatory Authority of the SR.

The Report reviews implementation period of the National Programme to date 31 December, 2020. The Report is based on contributions provided by MH SR, JAVYS, a. s., SE, a. s. and the NJF, follows on from the Report for the period of 2019 and considers current progress in the area of decommissioning of nuclear installations, management of SNF and RAW and the nuclear and radioactive materials of unknown origin in the SR in 2020. The Report refers to policies, intention, and objectives specified in individual chapters of the updated National Programme for the years 2016 - 2021.

Progress in the area of meeting short-term and long-term objectives specified in the Chapter 1.2 of the National Programme is given in the Chapter 2 of the Report. The objectives No. 2, 7, 9, 11, 12, and 13 are not included in the Chapter, as they have been evaluated in the previous reports as met. Overview of inventory of RAW, respectively SNF is updated in the Chapters 3 and 4. Progress made in the area of development of deep repository is described in the Chapter 5. Activities in the area of research, development and demonstration activities are summarized in the Chapter 6. Concise balance of existing costs spent for the Final Stage of Nuclear Power Engineering in the SR, as well as current status of total assumed costs including the way of securing of adequately accumulated funds to cover the costs are described in the Chapter 7. Recommendations for the next implementation monitoring period of the National Programme and information on its update development in 2019 – 2021 are summarized in the Chapter 8.

## 2. Meeting the objectives of the National Programme for the Management of Spent Nuclear Fuel and Radioactive Waste

Partial objectives of the National Programme are grouped under six categories: infrastructure and legislation, decommissioning of nuclear installations, management of radioactive waste and spent nuclear fuel in general, disposal of radioactive waste and spent nuclear fuel, research and development, transparency. Status of meeting those partial objectives (measures) is described in next sections followed by sequence numbers 1 to 19 dated 31 December, 2020. Some of partial objectives evaluated as met in previous reports are no more the subject of evaluation in the Implementation Report of the National Programme for the year 2020.

<i>Seq. No..</i>	Measure	Deadline	Responsible
<b>In the area of infrastructure and legislation</b>			
1.	<p>To amend the Act on the National Nuclear Fund and other subsequent legislative documents fundamentally with objective:</p> <ul style="list-style-type: none"> <li>- to guarantee the state will assume responsibility for decommissioning, management of RAW from decommissioning and for the long-term storage of SNF,</li> <li>- to guarantee the amendment to the Act shall establish safe manner of handing over the nuclear installations by operator to organization authorized by state for purposes of decommissioning thereof,</li> <li>- to guarantee, the level of contributions and payments to the NJF shall be determined by independent body (NJF) pursuant to imposed legislative procedures,</li> <li>- to guarantee beneficiary of financial resources of the NJF shall submit eligible cost data to the NJF in scope and terms set by legislation,</li> <li>- to guarantee scope and structure of eligible costs for activities in ZČJE shall be defined in legislation,</li> <li>- to guarantee operator of non-reactor nuclear installations shall make payments to the NJF for the purposes of financing of decommissioning thereof.</li> </ul>	2016	MH SR
<p>The Act No. 308/2018 Coll. on the NJF and related implementing rules entered into force in 2019. <u>To this respect the task is evaluated as met.</u> It is necessary to consider, whether all defined objectives linked to the NJF Act amendment have been fully reflected in the aforementioned amendment within the scope of ongoing National Programme update.</p> <p>First two partial objectives related to state responsibilities and the manner of handing over a nuclear installation for decommissioning have not been directly incorporated into the Act on the</p>			

<i>Seq.</i> No..	Measure	Deadline	Responsible
<p>NJF. Provisions related to responsibilities have been integrated into the amendment of the Act No. 541/2004 Coll. in 2019. The manner of handing over a nuclear installation for decommissioning has not been so far incorporated into the legislation.</p>			
<p><b>In the area of decommissioning of nuclear installations</b></p>			
3.	To implement further stages of A1 NPP decommissioning	2033	JAVYS, a. s.
<p>After completion of the Stage II of A1 NPP decommissioning in 2016, continual execution of the Stage III and IV of A1 NPP decommissioning for planned completion in 2024 started since 1 October 2016. Execution is based on following documents issued: Final Opinion of MŽP SR 2292/2015-3.4/hp, recommending the Stage III and IV of A1 NPP decommissioning by continual execution of planned activities, favorable Opinion of EC No. C(2016) 8461 as of 9 December 2016 pursuant to the Article 37 of Euratom, permission of PHA SR No. OOZPŽ/3942/2016, whereby authorizing practices resulting in exposure to radiation within “the Stage III and IV of A1 NPP nuclear installation decommissioning”, permission of NRA SR No. 369/2016, whereby authorizing the Stage III and IV of the nuclear installation A1 NPP decommissioning from operation in scope specified in the document “The Plan of the Stage III and IV of A1 NPP decommissioning “ and management of radioactive wastes of the nuclear installation A1 NPP in line with the document “Plan for management and transport of RAW and plan of management of conventional waste from the Stage III and IV of A1 NPP decommissioning”.</p> <p>Main subject of the Stage III and IV of A1 NPP decommissioning focuses on decommissioning of technological installations of gas management, management of heavy water, management of cooling water of primary circuit, systems for emergency discharge of steam generators and relief valves of steam generators, 2 pieces of steam generators, oil management of turbocompressors, control system for fuel cladding, systems of dosimetric control, liquid leakage detecting and disconnected air ventilation systems. In parallel with removal of indicated nuclear installation A1 technological devices, a challenging process for casings processing of long-term SNF storage and processing of high-level activity of chrompik III (aqueous solution of chromium and potassium dichromate <math>K_2Cr_2O_7</math>) originally used as cooling medium for the storage of SNF in particularly hazardous areas is under way. Equally important activities include management of contaminated soils and concrete, contaminated ground water remediation, of sludge layers arising from the long-term storage of SNF and sludge layers from outer tanks originally used for storage of liquid RAW during A1 NPP operation. Simultaneously with these activities monitoring, processing and conditioning of radioactive waste resulting from A1 NPP decommissioning and subsequent disposal in NR RAW of surface type is under way. Radioactive waste, which does not meet criteria for their disposal in NR RAW are stored in packed forms securing their stability in installations and premises constructed for this purpose until their permanent disposal in HÚ.</p> <p>Within the Stage III and IV decommissioning, there were completely decommissioned technological facilities in the gas management object, technological facilities of oil management, relief valves and emergency discharge valves of steam generators in a supporting machine room of the main production unit, air ventilation underground channel within outer objects of A1 NPP, high pressure tanks of heavy water management until the end of 2020. Processing of sludges resulting from the long-term storage of SNF from A1 NPP was also completed. Continuation of</p>			

<i>Seq.</i> No..	Measure	Deadline	Responsible
	<p>decommissioning of heavy water technology system, technology system for carbon dioxide cooling, technology system for cooling water, decommissioning of 2 pieces of steam generators, processing of casings from the long-term storage of A1 SNF, vitrification of chrompik III, processing of sludge layers from outer tanks A1 NPP, restoration, monitoring and classification of contaminated soils and concrete, as well as other successive activities of A1 NPP decommissioning are taking place as specified in the Plan of the Stage III and IV of A1 NPP decommissioning. All activities are implemented in accordance with the time schedule specified in the Plan of the Stage III and IV of A1 NPP decommissioning. Furthermore, preconditions for completion of all objectives and completing of the Stage III and IV of A1 NPP decommissioning until the end of 2024 are created.</p> <p>After completion of the Stage III and IV of NPP A1 decommissioning, successive implementation of the Stage V of NPP A1 decommissioning is continually planned from 2025 to 2033. Its principal objective will be decommissioning of 4 pieces of remaining steam generators, long-term storage for the spent nuclear fuel from NPP A1, the reactor and other successive technology equipment used in NPP A1 operation.</p> <p>Continual monitoring of overall progress of A1 NPP decommissioning is taking place by management of JAVYS, a. s., which assigns tasks based on achieved results. Performance of tasks is monitored at regular meetings of Project management for A1 NPP decommissioning in the presence of the NJF representatives.</p> <p>Based on current state of A1 NPP decommissioning as well as planned future activities state, it may be presumed that ongoing Stage III and IV of A1 NPP decommissioning will be terminated until the end of 2024.</p> <p><u>The task is under way.</u></p>		
4.	To implement the Stage II of V1 NPP decommissioning	2025	JAVYS, a. s.
	<p>Implementation of the Stage II of V1 NPP decommissioning started on 1 January 2015, based on the Decision of NRA SR 900/2014 issued on 23 December 2014. V1 NPP decommissioning is under way in form of subprojects, embracing all activities necessary for achievement of defined objective – „brown field“, i. e. release of the site for industrial deployment until 31 December 2025.</p>		

<i>Seq. No.</i>	Measure	Deadline	Responsible
-----------------	---------	----------	-------------

Projects in preparation and implementation in 2020 are listed in the Figure No.1.

**Figure No. 1: Projects in preparation and implementation in 2020 in V1 NPP decommissioning**

Project No.	Title of the project	Status of the project
A1.10	PMU Consultant (the Phase 10)	implementation
A1.11	PMU Consultant (the Phase 11)	preparation
A5-A2a	Correction of Power Supply System	preparation
B6.6A	Decommissioning Support Surveys	implementation
C7-A4	Metallic RAW Melting Facility	extended
D0	Decommissioning Programme Implementation Using Human Resources Available in Bohunice V1 NPP	implementation
D4.1	Modification of the Plant and Installation of New Equipment	implementation
D4.2	Dismantling of Reactor Coolant System Large Components of primary circuit	implementation
D4.4B	Dismantling of Systems in V1 NPP Controlled Area Part 1	implementation
D4.4C	Dismantling of systems in V1 NPP Controlled Area Part 2, Subproject D4.4C.01	implementation
D4.7.	Merged projects D4.5, D4.6 and D4.7 Decontamination and Demolition of V1 NPP Buildings and Site Restoration, Subproject D4.7.01	preparation

There were 8 projects in total in implementation process in 2020 – A1.10, D0, B6.6A, C7-A4, D4.1, D4.2, D4.4B, D4.4C.01. Above mentioned projects continue in implementation also in 2021.

The project D4.2 “Dismantling of Reactor Coolant System Large Components of primary circuit” was a significant project for achieving the end state in 2020 in view of implementation of overall V1 NPP decommissioning project. Primary purpose of the project is dismantling of the most contaminated facilities (reactor pressure vessels of both reactor units, steam generators, main

<i>Seq.</i> No..	Measure	Deadline	Responsible
	<p>circulation pumps, pipelines of the primary circuit and other technology components) and linings in spaces of V1 NPP the controlled area of main production unit. Alongside this project, projects D4.4B “Dismantling of Systems in V1 NPP Controlled Area– Part 1” and D4.4C.01 “Dismantling of Systems in V1 NPP Controlled Area – Part 2”, were implemented successfully. Projects D4.2 and D4.4C.01 will also be significant in next two calendar years, particularly in the view of smooth continuity of V1 NPP decommissioning and the beginning of the final stage of V1 NPP decommissioning.</p> <p>Implementation of V1 NPP decommissioning is undertaken in conformity with the approved plan of the Stage II with slight delay in some projects concerning the time-table of 2014. Slight delays in individual project implementation caused by objective factors could not have been foreseen to full extent and thus eliminated in project preparation process and have not had major impact on V1 NPP decommissioning progress. Major delay displays project C7-A4 Metallic RAW Melting Facility, determined for processing of metallic RAW from decommissioning of both nuclear installations, direct impact of which on V1 NPP decommissioning is minimal.</p> <p>Performance of works at the site were interrupted from 17 March 2020 until 31 March 2020 by JAVYS, a. s. management decision due to preventive measures against the spread of pandemic disease of new coronavirus COVID-19. After this period contractors continued in dismantling works implementation of V-1 main production unit facilities with partially limited number of workers in regards to “Extraordinary preventive measures to minimize spread of COVID-19 disease under conditions in company JAVYS, a. s.”. The latest status of V1 NPP decommissioning projects was monitored in detail throughout the year 2020 and is still monitored. In case of situations arising from delays or in case of any crisis, immediate coordination in individual project including relations with other activities is carried out. It is not excluded that in case of prolonged period or worsening state of spread of coronavirus COVID-19 pandemic disease and need for strengthening preventive measures, may these measures have an impact on deadlines of V1 NPP decommissioning projects.</p> <p>In parallel with dismantling activities there is a continual demanding process under way concerning management of radioactive waste generated, their transport and release of materials meeting the criteria for their release into the environment.</p> <p>Overall progress with individual projects included is monitored continually via monthly and also semiannual reports and meetings of managers of respective projects, representatives of consultant and EBRD, representatives of SIEA, MH SR and the NJF and also semiannual monitoring committee meetings have been taken place with the participation of JAVYS, a. s., SIEA, the NJF, MH SR, EBRD and the European Commission.</p> <p>Implementation of the Stage II V1 NPP decommissioning is to a significant degree contingent upon complex financial management of this process. For successful course of decommissioning projects, adequate funding from BIDSF, SIEA and adequate national (i. e. Slovak) financial resources from the NJF are expected. Decommissioning termination is dependent on a careful and systematic planning of activities, scope of individual projects and the overall period of procurement process relating to those projects. On the basis of the current V1 NPP decommissioning state as well as state of future planned activities, it may be presumed that main</p>		

Seq. No..	Measure	Deadline	Responsible
<p>decommissioning V1 NPP activities will be implemented until the end of 2026. However, it is not possible to exclude termination of projects thereafter.</p> <p><u>The task is under way.</u></p>			
5.	Maximum use of financial resources from BIDSF for V1 NPP decommissioning projects	2025	JAVYS, a. s.
<p>Effectivity of using BIDSF resources in V1 NPP decommissioning is monitored pursuant to project management procedures for V1 NPP decommissioning and monitored via regular weekly and monthly meetings, from which weekly and monthly reports on decommissioning progress are developed afterwards. Additionally, monitoring report for V1 NPP decommissioning monitoring committee is conducted semiannually.</p> <p>V1 NPP decommissioning financing is comprised of two resources – resources of EU and national resources of the SR. Financial resources of the EU are preferably used in implementation of projects. Out of total number of 73 V1 NPP decommissioning projects, 71 projects were funded predominantly through the EU resources. National resources of the SR are for the most part used for activities connected with incurred supporting costs, associated with implementation of decommissioning projects, considerations of projects and co-financing, for management, maintenance and repairs of objects, management of RAW including disposal and for storage of SNF. Project C7-A4 Metallic RAW Melting Facility is being implemented predominantly from national resources.</p> <p>18 Grant agreements between EBRD and JAVYS, a. s. were approved for a guaranteed amount of € 484 million for V1 NPP decommissioning projects to date 31 December 2020 (€ 471 million reevaluation). Additionally, 2 Grant agreements between the National Agency SIEA and JAVYS, a. s. were concluded for an amount of € 151 mil. (total amount will be increased based on public procurement outcomes for the project D4.7.01). The total guaranteed amount represents € 635 million. Cumulative amount of € 390 million was withdrawn from BIDSF and SIEA funds to date 31 December 2020. Amount of non-guaranteed EU resources corresponds to € 11 million to date 31 December 2020. Amount of non-guaranteed funds managed by the National Agency SIEA corresponds to € 4 million. Additional allocation of EU resources amounting to € 34 million for National Agency SIEA is foreseen in 2021.</p> <p>Total estimated costs for V1 NPP decommissioning (stated at the price level of 2019) amounting to € <b>1 237</b> million, whereby the sum of € 672 million shall be reimbursed by the EU (EBRD and SIEA).</p> <p><u>The task is under way.</u></p>			
6.	To prepare decommissioning of other NI	permanently	JAVYS, a. s. SE, a. s.
<p>Procedures, time tables and the costs for decommissioning of other NI are given in the conceptual plans for decommissioning of respective nuclear installations from operation developed in line with the requirements under the Act No. 541/2004 Coll. on the Peaceful Use of Nuclear Energy and amending and supplementing certain acts and the Decree of NRA SR No. 58/2006 Coll.</p>			

<i>Seq.</i> No..	Measure	Deadline	Responsible
	<p>Conceptual Decommissioning Plans of NI are updated in line with requirements of the Decree No. 102/2016, § 22, point 2: “Authorization holder pursuant to § 5 section 3 b) and c) of the Act shall update the Conceptual Decommissioning Plan of nuclear installations from operation following changes to nuclear installation or change at locality, progress in technology, amendments to generally binding rules and the National Programme for execution of the National Policy, events, funding changes and present radiological conditions.”</p> <p>Conceptual Decommissioning Plan for EMO 3,4 was submitted to the NJF, pursuant to the provisions cited above in 2020. The NJF released an opinion to its economic section with requirements for its amendment.</p> <p>Conceptual Decommissioning Plans of NI TSU RAW, FS LRAW, IS RAW, MSVP have been updated in 2020 due to implemented changes at NI as well as due to elaboration of the study Costs for non-reactor nuclear installations TSU RAW, FS LRAW, IS RAW, MSVP decommissioning and stipulating costs for termination of operation of NI NR RAW“.</p> <p><u>The task is under way.</u></p>		
<b>In the area of the management of radioactive waste and spent nuclear fuel in general</b>			
8.	To build new storage capacities of SNF	2020	JAVYS, a. s.
	<p>Construction of new storage capacities of SNF, as a necessary precondition for the safe operation of nuclear units in the SR, is implemented under ongoing investment project „Completion of construction for storage capacities of SNF“, implementation of which started in July 2017 after receiving the Final Opinion of MŽP SR to proposed activity No. 1064/2016-3.4/hp. Works in area of replacement of utility network, removal of construction objects in place of interest for construction, as well as design works in scope of development of project for construction permit were carried out within project implementation in 2018-2019. As a result of NRA SR demands in the light of taking into account recommendations and instructions of IAEA and WENRA for improving seismic resistance of SNF storage capacities building activities, it was necessary to ensure to revising original construction-technical and technological design of SNF storage capacities.</p> <p>Project activities related to construction of dry storage for SNF continued in 2020 in the following extent:</p> <ol style="list-style-type: none"> <li>1. Project documentation of storage capacities of SNF was elaborated and subsequently approved by NRA SR in scope of implementation project leading to the granting of building consent with incorporated requirements of NRA SR included, taking into account of recommendations and instructions of IAEA and WENRA for improving seismic resistance of SNF storage capacities building activities.</li> <li>2. Project documentation of packed form was elaborated and subsequently approved by NRA SR.</li> <li>3. Project documentation for physical area protection and barrier system of MSVP was</li> </ol>		



Seq. No..	Measure	Deadline	Responsible
	<p>elaborated and subsequently approved by NRA SR.</p> <ol style="list-style-type: none"> <li>4. Notification process has been completed in accordance with Annex I of the Commission recommendation 2010/635/Euratom on the application of Article 37 of the Euratom Treaty.</li> <li>5. On the basis of application provided NRA SR consent with preparatory works implementation has been issued. This implementation was carried out in a scope of new survey measuring points foundation, foundation engineering, installation of fences, connectors to construction site and examining of foundation engineering proposal through pile testing.</li> <li>6. Request for binding decision for NI sitting and NI construction was submitted to PHA SR.</li> <li>7. Application for change to NI and application for construction permit were submitted to NRA SR.</li> </ol> <p>Assumption for commissioning of completed SNF storage capacities is 114 weeks after building permit will enter into force.</p> <p>The task is under way.</p>		
10.	To construct Metallic RAW Melting Facility	2018	JAVYS, a. s.
	<p>Metallic RAW Melting Facility construction intended for effective processing of metallic waste generated mostly from NI decommissioning process with subsequent release the highest possible volume of metallic material into the environment is in progress within investment project implementation “Metallic RAW Melting Facility“ Its implementation has commenced in September 2016 after obtaining the Final Opinion of MŽP SR to proposed activity No. 1775/2015-3.4/hp. Construction permit for Metallic RAW Melting Facility was issued in December 2017.</p> <p>Investment project is implemented within V1 NPP (C7-A4) decommissioning projects with portion of funding 19 % of BIDSF and 81 % of the NJF and JAVYS, a. s. Termination of the project included tests was planned until the end of 2018 originally. Individual pre-complex tests were carried out of individual equipment of the line for remelting of metallic RAW in 2020. Commissioning of the facility is planned at the end of 2021 due to changes in project documentation related to change of the melting furnace as well as need for modifications and amendments resulting from the above tests of equipment.</p> <p><u>The task is under way with a delay.</u></p>		
14.	To adopt decision on continuation or withdrawal of twin approach in development of deep disposal – comprehensive assessment of the idea of joint international deep repository	2020	MH SR
	One of two alternatives for addressing the Final Stage of Fuel Cycle in the National Policy for the Management of SNF and RAW in the SR envisages disposal of SNF in international deep		

<i>Seq.</i> No..	Measure	Deadline	Responsible
<p>repository.</p> <p>While none of alternatives for solution to deep disposal in the SR has not been researched adequately so far, the decision on twin approach is recommended to be postponed for the next years. Such decision must be preceded by detailed expert analysis of both alternatives.</p> <p><u>The task is under way.</u></p>			
16.	To decide on siting of Deep Repository of the SR (in case of termination of twin approach)	2030	JAVYS, a. s.
<p>Staged time schedule of deep geological repository preparation was elaborated in JAVYS, a. s. in 2019 and approved by the management of the company in December 2019, based on MH SR requirement. This time schedule includes the Strategy for communication to the public and setting key project milestones as a basis for planned update of the “National Policy and the National Programme for the Management of Spent Nuclear Fuel and Radioactive Waste in the SR” and it is also in a compliance with item B.3 of the Government of SR Resolution No. 402 as of 5 September 2018.</p> <p>The aforesaid document was forwarded to MH SR for a review at the beginning of 2020. In case of favorable opinion of MH SR other works based on the document: “Proposal of Staged time schedule of deep geological repository preparation and Strategy for communication to the public in area of development of HÚ in SR” will be implemented. These works are integrated into the investment project “Development of deep repository the Stage II – part 2”, which contains terrain and surveying works, public relations and so on. in selected localities, so the final decision on siting of Deep Repository in the SR will be possible to adopt until the end of 2030“.</p> <p>Next steps in preparation and implementation of the project will be further elaborated within the update of respective part of the National Policy and the National Programme for the Management of Spent Fuel and Radioactive Waste in the SR.</p> <p>The task is under way.</p>			
17.	To commission Deep Repository	≈ 2065	JAVYS, a. s.
<p>Implementation of the project „Deep Repository – locality selection the Stage 2 – part I“ was in progress in 2017-2018 and completed in December 2018. Basic conditions for steps towards preliminary selection of locality for construction of HU in the SR were ensured in this project. Thus, in case of termination of twin approach it will help to ensure construction and commissioning of HU in the SR until 2065.</p> <p>With exception to „Project of geological task“, following tasks are implemented within the project „Deep Repository – locality selection, the Stage 2 Part I“</p> <ul style="list-style-type: none"> <li>• Framework Programme for development and research in the area of deep disposal for all stages and for all areas of HU development,</li> <li>• Development and preparation for implementation of system for economic stimulation of localities affected by development and operation of repositories.</li> </ul> <p>Currently works on continuation of the project „Development of Deep Repository the Stage 2 –</p>			

<i>Seq. No.</i>	Measure	Deadline	Responsible
	<p>Part II“ of development of HU in the SR are ongoing, namely concept development for public relations and supporting documents preparation for supplier selection for the next stage (see evaluation of the measure No. 16).</p> <p>Further procedure in project implementation will be developed in detail within update of respective part of the National Policy and the National Programme for the Management of Spent Fuel and Radioactive Waste in the SR, processing of which commenced at the end of 2020.</p> <p><u>The task is under way.</u></p>		
<b>In the area of research and development</b>			
18.	To develop Framework Programme for development and research in the area of deep disposal and set internal conditions for its implementation.	2018	JAVYS, a. s.
<p>Document B.2 Framework Programme for development and research in the area of deep disposal was elaborated by suppliers (DECOM, ÚJV Řež) within implementation of the project „Deep Repository – locality selection the Stage 2 - part I“, which was in progress during 2017 – 2018. <b>Framework Programme for development and research</b> was described in detail for all stages and areas of HU development. Whole process until the stage of repository closure is planned for at least 100 years, practically. Therefore, it was possible to describe in detail especially activities for the next 15 - 20 years (locality selection stage).</p> <p>The task concerning development of Framework Programme for development and research is <b>completed</b>, the part concerning setting of internal conditions for implementation of this framework programme forms part of the update proposal of the National Programme, as well as procedure described in the item 5 of this Report.</p>			
<b>In the area of transparency</b>			
19.	<p>To develop and prepare implementation of system for economic stimulation of localities affected by development and operation of repositories</p> <p>To focus exclusively on economic stimulation of localities is not adequate. A comprehensive system for information and public relations for the long-term should be established.</p>	2018	<p>MH SR, JAVYS, a. s.</p> <p>National Nuclear Fund</p>
<p>Document <b>B.3 Proposal for implementation of the System for economic stimulation of localities affected by development and operation of Deep Repository</b> was developed. This document was developed within implementation of the project „Deep Repository – locality selection the Stage 2 – part I“ in 2017 - 2018. The document relied on recommendations for public relations developed in the Stage I of HU project – locality selection.</p>			

<i>Seq.</i> No..	Measure	Deadline	Responsible
	<p>Proposal for economic stimulation of affected localities is analyzed in detail in the document in three variants. They are elaborated in detail into complete wording of proposals for Government Decrees including related supported documents. Time table and sequence of individual steps including responsibilities for implementation were also described in the document. In addition to proposal for stimulation, the document contains also conditions and recommendations for the area of public participation, which is of vital importance in the locality selection decision process.</p> <p>The document „Proposal for staged time table for preparation of HU and the strategy for communication to the public in the area of HU development in the SR“ was elaborated in JAVYS in 2019 based on the task of the Minister of Economy. In addition to Proposal of own procedure until 2030 or 2038 respectively, the paper includes Proposal for public relations and Proposal for the Government Decree, which should specify conditions and procedure for economic stimulation of localities affected (developed based on outcomes of the project „Deep Repository – locality selection, the Stage 1 or 2 respectively – the Part I“). Thus, the implementer selected and slightly modified one of three suggested variants. The task concerning development of the proposal for economic stimulation on 31 December 2018 is evaluated as <b>completed</b>. The part concerning establishment of comprehensive system for information and public relations for the long-term is included in the update of the National Programme as well as in <u>the procedure described in the item 5 of this Report</u>.</p>		

### 3. Management of RAW

Overview data of RAW for previous evaluation included in the Implementation Report of the National Programme for the period until 31 December 2019 are indicated in division under individual areas of RAW management.

### **3.1 Overview of generation and recording of RAW**

Following quantities of RAW from implemented activities of decommissioning and operation of individual NI were transferred to company JAVYS, a. s. for processing for the period from previous evaluation of implementation of the National Programme for the Management of Spent Nuclear Fuel and Radioactive Waste thus for the year 2020.

#### **3.1.1 Decommissioning of A1 NPP:**

- liquid radioactive waste: 521,3 m<sup>3</sup>,
- combustible solid radioactive waste: 21,318 t
- compressible solid radioactive waste: 105,852 t,
- metallic RAW determined for remelting: 223,772 t,
- other solid radioactive waste (fixed ra-sludges in matrix, etc.): 200,89 m<sup>3</sup>,
- contaminated used filtration cartridges of air-technical systems: 2,41 t.

#### **3.1.2 Decommissioning of V1 NPP:**

- liquid radioactive waste-concentrates: 55,01 m<sup>3</sup>,
- combustible solid radioactive waste: 13,395 t,
- compressible solid radioactive waste: 466,402 t,
- metallic RAW and metallic contaminated material: 1417,025 t,
- contaminated used filtration cartridges of air-technical systems: 5,528 t.

#### **3.1.3 Following types and quantities of RAW from operation of V2 NPP and NPP EMO 1, 2 were transferred by company SE, a. s. for further management in JAVYS, a. s.:**

- liquid radioactive waste – concentrates: 184,01 m<sup>3</sup>,
- liquid radioactive waste – exchange resins: 15,243 m<sup>3</sup>,
- solid radioactive waste – combustible: 23,266 t,
- solid radioactive waste – compressible: 13,572 t,
- solid radioactive waste – metallic RAW: 0 t,
- radioactive sources: 44 pieces,
- contaminated used filtration cartridges of air-technical systems: 7,535 t,
- solid RAW for classification: 1,9 t.

RAW generated in A1 NPP decommissioning process were continuously processed at TSU RAW processing lines and soils and contaminated concrete at designed work places in conformity with the plan for RAW flows for 2020. Final product-filled VBK and filled high-volume bags and drums of VLLW were continuously disposed in NR RAW. Because of increasing waste generation in V1 decommissioning process in this time, temporary storage for compressible RAW and contaminated metallic materials intended for remelting was provided.

### **3.2 Storage and conditioning of RAW**

#### **3.2.1 Following activities of RAW management were carried out in NI TSU RAW**

- Incineration of RAW – by incineration was processed:
  - 29,38 t of SRAW from decommissioning of NI (A1, V1),
  - 17,765 t of SRAW and 4,618 m<sup>3</sup> of combustible LRAW and spent sorbents from operation of NI (V2, EMO 1,2).
- high compressed compacting of solid RAW – by high compressed compacting was processed:
  - 377,274 t of compressible SRAW from decommissioning in NI (A1, V1),
  - 18,436 t of compressible SRAW from operation in NI (V2, EMO 1,2).
- cementation of RAW – by cementation into VBK was conditioned:
  - 392,096 m<sup>3</sup> SRAW from NI (A1, V1) decommissioning,
  - 15,586 m<sup>3</sup> SRAW from NI (V2, EMO 1,2) operation,
  - 164,139 m<sup>3</sup> LRAW from (A1, V1) decommissioning,
  - 124,149 m<sup>3</sup> LRAW from NI (V2, EMO 1,2) operation.
- by fragmentation was processed:
  - 252,186 t metallic RAW from NI (A1, V1) decommissioning,
  - 0 t RAW from NI (V2, EMO 1,2) operation.
- by decontamination was processed:
  - 253,261 t metallic RAW from NI (A1, V1) decommissioning,
  - 0 t metallic RAW from NI (V2, EMO 1,2) operation.

#### **3.2.2 Following quantities of RAW from A1 NPP decommissioning were used in specialized technology facilities of JAVYS, a. s.:**

- vitrification of chrompik:
  - 2 m<sup>3</sup> of chrompik III were processed.
- handling with contaminated soils and concrete:
  - 1560 m<sup>3</sup> of contaminated soils and concrete were processed.
- fragmentation of casings of the Long-term storage:
  - 28 pieces of PDS were processed.
- fixation of sludges:
  - 54,61 m<sup>3</sup> ra-sludges from tanks of outer objects were fixed into cement matrix in ZFK facility, 4,55 m<sup>3</sup> ra-sludges of A1 NPP HVB were fixed in SUZA II facility.

#### **3.2.3 In NI FS LRAW in JAVYS, a. s. in Mochovce was processed**

By cementation of RAW into VBK conditioned:

- 122,846 m<sup>3</sup> RAW from A1 NPP and V1 NPP decommissioning,
- 109,331 m<sup>3</sup> LRAW from NI NPP EMO 1,2 operation.

Processing of RAW at technology lines of TSU RAW and FS LRAW was implemented in line with the plan of RAW flows in 2020. Most widely used technologies connected to management of RAW generated in the SR were applied in the fields of high compressed compacting, fragmentation, decontamination of metallic RAW and processing of air-technical filters. Coordination of individual processes and relations including transports and disposal in NR RAW were in conformity with JAVYS, a. s. plan. Processing of RAW from SE, a. s. was executed in conformity with the contract.

Special kinds of RAW, e. g. chrompik, sludges from DS, casings of DS and other specific RAW from A1 NPP were processed in line with the scheduled plan and flows of RAW in conformity with the time table of A1 NPP decommissioning project. It is assumed, these quantities will be continuously processed within the expected terms. Defining optimal procedure for processing and conditioning for some RAW has been yet subject for further development.

### **3.3 Management of radioactive material of unknown origin**

8 interceptions of RMNP were executed in 2020. 156 drums with radioactive material were stored in IRAW and RMNP storage in Mochovce. 0,269 m<sup>3</sup> of IRAW and RMNP containing nuclear material were stored in NI MSVP.

### **3.4 Storage of RAW**

#### **3.4.1 Storage in NI TSU RAW JAVYS, a. s.**

Following quantities of RAW were stored in certified storages of RAW, located at NI TSU RAW JAVYS, a. s. site to date 31 December 2020:

<b>Object</b>	<b>Room number</b>	<b>Filling status (200 dm<sup>3</sup> drum)</b>	<b>Filling status (%)</b>	<b>Storage capacity (200 dm<sup>3</sup> drum)</b>
32	30/54	3322	89,2	3724
32	97	1632	79,6	2050
32	106	1265	85,5	1480
34	1	2819	98,6	2860
723	-	684	85,5	800
641	-	1237*	49,4	2506**
810	-	1780,52****	13,29	13400

\* 2902 drums of 200 l of RAW, 1417 drums of 220 l of RAW, 7 drums of 400 dm<sup>3</sup> of RAW, 189 containers 2EM-01 of RAW, 263 pieces of metal fence pallets of RAW

*\*\* Maximum area coverage, i. e. combination of package forms of RAW and freely disposed radioactive materials in relation to number of layers of stacking of individual package forms*

*\*\*\* 120 of 200 dm<sup>3</sup> drums of RAW in 3256 drums of 200 dm<sup>3</sup> of RAW in 814 pallets PS 15/4AT, 44 fence pallets of RAW, 12 ISO' 20 containers of RAW, 8 VBK of RAW in TK150, 1 VBK of RAW in TK080.*

### **3.4.2 Storage in SE, a. s.**

In V2 NPP storages following quantities were stored to date 31 December 2020:

- 93,6 t of SRAW,
- 1401,7 m<sup>3</sup> of concentrates,
- 90,9 m<sup>3</sup> of ion exchangers.

In NPP EMO 1,2 storages following quantities were stored to date 31 December 2020:

- 43,9 t of SRAW,
- 1141 m<sup>3</sup> of concentrates,
- 0 m<sup>3</sup> of ion exchangers.

Storage capacities of SE, a. s. are adequate in regard to continuous transfer of RAW for processing. Air-technical filters that no longer complies with the limits for their release into the environment pursuant to the Act No. 87/2018 Coll. also increased the inventory of solid RAW.

Pre-complex test (PKV) of technology for selective separation of radionuclides from liquid concentrates in NPP EMO was performed in February 2019. After authorization by NRA, KV active tests are planned expected in April 2021. All systems of the line will be tested. It is planned to process 15 m<sup>3</sup> of radioactive concentrate during KV tests.

As filling status in certified storages in TSU RAW installation in JAVYS, a. s. demonstrates, available capacity indicates a need for metallic RAW processing in a facility designed for remelting. On the other hand, coordination of handling process with materials from A1 NPP and V1 NPP decommissioning is necessary to avoid overload in storages.

Process of environmental impact assessment for the investment project "Optimization of processing capacities and technologies for processing and conditioning of radioactive waste of JAVYS, a. s. in locality of Jaslovské Bohunice" was in progress in 2020. It includes also replenishment of temporary storage capacities for contaminated materials resulting mostly from NPP V1.

## **3.5 Disposal of RAW**

### **3.5.1 Disposal of VBK in NI NR RAW Mochovce**



- to date 31 December 2020 in total of 6 206 pieces of VBK from decommissioning and from operation of NI were disposed in the National Repository for RAW, (the first and second double row), whereby 394 pieces of VBK from decommissioning and operation of NI were transported and subsequently disposed into the second double row of disposal structures in this installation for the year 2020.

### **3.5.2 Disposal to VLLW repository**

- quantity of 3 545,8 m<sup>3</sup> of VLLW was transported and subsequently disposed in the so-called second disposal module in NI NR RAW, section for VLLW disposal for the year 2020. Out of this number 3 485,8 m<sup>3</sup> VLLW resulted from the A1 NPP decommissioning and 60,0 m<sup>3</sup> of VLLW from the V1 NPP decommissioning. To date 31 December 2020 amount of 14 262,7 m<sup>3</sup> of VLLW was disposed in total in two disposal modules (the first disposal module – 7 361,5 m<sup>3</sup> of VLLW, and the second disposal module – 6 901,2 m<sup>3</sup> of VLLW).

## **4. Management of SNF**

Activities connected with SNF management are assessed since the period of previous review of the National Programme implementation until 31 December 2020.

### **4.1 Transfer of SNF for storage**

Following quantities of SNF from the V2 NPP and NPP EMO 1, 2 operations, were transferred by the company SE, a. s. for the long-term storage in NI MSVP for the period from the previous review of the National Programme implementation, thus for the year 2020:

- the spent nuclear fuel from V2 NPP operation: 152 pieces,
- the spent nuclear fuel from NPP EMO 1, 2 operations: 144 pieces.

### **4.2 Storage of SNF**

To date 31 December 2020, 13 008 pieces of fuel assemblies of SNF were stored in NI MSVP out of which:

- 5143 pieces from the V1 nuclear power plant,
- 5513 pieces from the V2 nuclear power plant,
- 2352 pieces from the nuclear power plant EMO 1, 2.

## 5. Development of Deep Repository

The document „B.4.2 Plan of works for the years 2019 - 2024 in the area of HU development in the SR“, elaborated in 2018 (see text to the task No. 16), describes plan of works for a given period of time in different areas of the Programme for Development of Deep Repository for RAW. It concerns specifically following sections:

- Section 1: Coordination of the Programme for HU RAW
- Section 2: Surveying geological works for a locality selection
- Section 3: Public participation in the Programme for HU development
- Section 4: Demonstration of safety
- Section 5: Feasibility study

Report for the year 2018 indicates „In subsequent period JAVYS, a. s. will implement, based on the abovementioned documents, a selection procedure for general contractor for implementation of activities in locality selection (geological activities, terrain and surveying works in selected localities, safety demonstration, support for public relations etc.), so the final decision on siting of Deep Repository in the SR will be possible to adopt until the end of 2030“.

Investment overhead costs were spent for the development of HU by the company JAVYS, a. s. for public procurement preparation in 2020.

## 6. Evaluation concerning Chapter 5 of the National Programme the Demand for the research, development and demonstration activities

As far as research, development and demonstration activities are concerned, activities of research and development were implemented in 2020, what is highlighted in the following figure, respectively projects indicated in the Report for 2019 continued:

**Figure No. 2: Project/tasks focused on research and development activities in 2020**

Title and content of task/project	Competent organization in SR	User of outcomes	Financial arrangement
THERAMIN Thermal Treatment for waste focused on minimization of RAW and hazard reduction	VUJE, a. s.	European Commission, user of partial outcomes JAVYS, a. s.	European Commission, H2020 Euratom Programme
Development of fixation matrix for sludges from chrompik	VUJE, a. s. in decommissioning outputs of A1 NPP	JAVYS, a. s.	NJF resources within costs for decommissioning of A1 NPP
EURAD - European Joint Programme on	NJF, VUJE, FEI STU	European Commission, user	European Commission,

Radioactive Waste Management, work package ROUTES (“Waste management routes in Europe from cradle to grave”)		of partial outcomes NJF, MH SR, JAVYS, a. s.	H2020 Euratom Programme
Covering model at the site of NR RAW Mochovce monitoring	VUJE, a. s.	JAVYS, a. s.	NJF within costs for NR RAW Mochovce operation

Project THERAMIN involving up to 20 professional organizations within Europe contributed to optimization of input materials (glass, additives) for vitrification of chrompik. Its effect is seen throughout exchange of experience and transfer of know-how in the area of monitoring and declaration of fixation matrix from thermal processing of RAW among renowned organizations in the EU.

On the one hand fixation matrix development for sludges from chrompik is executed in framework of tasks for the Stages III and IV of A1 NPP decommissioning, but on the other hand implemented activity is of development and scientific nature, although it is in principle specific and restricted solely to the field of A1 NPP.

Project EURAD is a joint framework project of the European Commission covering priority key problems of RAW and SNF management, focused mainly on development of deep repositories in Europe. The purpose of the work package ROUTES is an exchange of experience and knowledge on methods of RAW management among participating organizations and identification of need for research and development in the field of RAW management. The programme addresses topics relevant also to Slovakia such as management of problematic waste or sharing capacities for RAW management.

In-situ demonstration model for final covering of Low-Level Waste Repository in Mochovce was developed in 2005 and is serving for validation of mathematical models and demonstrating material long-term quality, stability of surface and structures of proposed final covering of Low-Level Waste Repository in Mochovce.

## 7. Evaluation to Chapter 7 Plan of costs

Considering evaluation of status of financial resources necessary for the coverage of costs for the Final Stage of Nuclear Power Engineering in relation to the Chapter 7 of the National Programme containing data on assumed total costs at the price level of 2014 (€ 8 000 million), data on 31 December 2020 are as follows:

- total sum of accumulated financial resources on the NJF accounts: € 1 853, 522 mil.,
- the sum of financial resources spent for the coverage of costs on A1 NPP sub-account: € 765,8 mil.,
- the sum of financial resources spent for the coverage of costs on V1 NPP sub-account: € 237,8 mil. (including SNF storage),

- the sum of costs incurred for RAW disposal from A1 NPP and from V1 NPP in NR RAW: € 41,1 mil.,
- the sum of financial resources incurred for Deep Repository development: € 3,07 mil.

Overall, financial resources were incurred to A1 NPP and V1 NPP decommissioning (including SNF storage and disposal of RAW in NR RAW in Mochovce) in amount of € 1 044,7 million of the NJF resources and € 390 million of EU resources to date 31 December 2020.

Compulsory contributions and compulsory payments to the NJF are collected for securing financial resources for the coverage of costs for the Final stage of operating installations. The level of resources is based on approved methodology. The levels of compulsory contributions and payments to the NJF are to be found at the Government Decree No. 22/2019 Coll. on compulsory contributions and compulsory payments to the NJF. The level of assumed costs for Deep Repository amounts to the sum of **€ 3 573,4 mil.** stated at the price level of 2016.

Transfer from MH SR from resources in form of a delivery is collected by the operators of distribution systems and transmission system and is included in payments of end users for electricity delivered. This secures resources for A1 NPP and V1 NPP decommissioning. The level of this delivery is determined in the Government Decree No. 21/2019 Coll. on the level of annual delivery determined for the reimbursement of the historical deficit from the delivered electricity to its end users.

Decommissioning costs for individual NI have been continuously updated. Expected costs for operating installations decommissioning are contained in regularly updated conceptual decommissioning plans. Expected costs for V1 NPP decommissioning including BIDSF projects and related costs are the subject of updated detailed plan for V1 NPP decommissioning. Economic section of the document was reviewed by the NJF as a result of submitted application for amendment of the document at the end of 2019. Expected costs for Stage III and IV of NPP A1 decommissioning are indicated in plans for Stage III and IV of NPP A1 decommissioning. Update of costs for the Stage V of A1 NPP decommissioning was in progress during 2020 within preparatory analyses for the Stage V of A1 NPP decommissioning. However, it was not submitted for the NJF review in 2020. Updated costs will be integrated into ongoing update of National Programme for the Management of SNF and RAW in the SR.

## **8. Proposal for modifications of the National Programme update**

The National Programme for the Management of SNF and RAW in the SR as strategy document in the area of the Final Stage of the Peaceful Use of Nuclear Energy in the SR is being updated. Meetings of Task force on update of the National Programme were organized since September 2020. Its role was to analyze in detail currently applicable National Programme, to compile texts of individual chapters of the proposal of the National Programme update and to develop necessary input documents and data.

In the light of the Directive EURATOM 2011/70 establishing Community Framework for responsible and safe management of spent fuel and radioactive waste, a peer review mission ARTEMIS was scheduled at the beginning of 2021. After having taken into account

situation resulting from the pandemic Covid-19, it has been mutually agreed at the on-line meeting with the representatives of IAEA in November 2020 that the date for execution of ARTEMIS mission will be postponed from February 2021 to September 2021. The National Programme for the Management of SNF and RAW in the SR will be analyzed by *peer review mission* from the perspective of its compliance with the principles and requirements indicated in the Directive EURATOM 2011/70 and IAEA documents. Working team meetings for expert mission preparation took place in 2020. Moreover, answers to Self-assessment Questionnaire were processed representing one of principal input for the mission expert team, as well as effective tool for identification of shortcomings and initiatives for the National Programme update. Key areas from the point of the ongoing National Programme update will be reflected in so-called Action plan for the National Programme update, which will be submitted to the ARTEMIS mission expert team for the assessment.

Areas identified as key areas in analytical stage of the National Programme update process, as well as during Self-assessment Questionnaire of ARTEMIS mission processing are subjects of assessment, analysis, possible update or detailed elaboration. Update of such areas was indicated preliminary also in previous National Programme implementation reports. This includes in particular:

- update of the objectives of the National Policy and its structure,
- area of National framework – analysis of competencies, responsibilities and legislative documents relating to the Final Stage of the Peaceful Use of Nuclear Energy in the SR and identification of possible deficiencies and unexamined areas,
- topic of entity for management of “national inventory” of SNF and RAW, method of indicating and update of current and future inventory of SNF and RAW,
- analysis of capacities and needs in the area of SNF and RAW management,
- strategy for decommissioning of individual nuclear installations,
- the field of calculations of compulsory contributions and compulsory payments,
- analysis of the amount of the historical deficit and the time table of its settlement,
- update of procedures in the field of HU locality selection and enhancing the progress monitoring of project,
- support for the field of science, research, preservation and knowledge and skills transfer to address the needs of the National Programme,
- supplement of indicators for monitoring and progress demonstration in the National Programme implementation not only in the field of SNF and RAW management but also in other fields of the Final Stage of Nuclear Energy and system of evaluation thereof.

## 9. Conclusion

Active phase of the National Programme for the Management of SNF and RAW in the SR update commenced in 2020. This was preceded by the preparation phase consisting in elaboration of preparatory documents and obtaining raw input data. Individual task forces composed of entities concerned representatives should analyze existing National Programme, specify the necessary areas for update, compile texts of individual chapters of the proposal of the National Programme update and develop missing input documents and summarize the data. With regard to situation concerning COVID 19 pandemic, several meetings took place in on-line form. Document processing was also affected by restrictions in execution of home office working scheme.

The most of 19 established partial objectives in currently applicable National Programme are achieved or are in implementation stage respectively, as they are long-term objectives exceeding partial 6 years period of the National Programme implementation. 3 partial objectives have been performed with delays. Significant progress has been reported in the area of nuclear power plants (A1 NPP and V1 NPP) decommissioning and management of SNF and RAW, as main activities of the Final Stage of the Peaceful Use of Nuclear Energy in the SR. These activities were in progress in conformity with project time tables and financial plans and in line with the National Programme.

Several meetings concerning the preparation of the ARTEMIS review mission also took place in 2020. The purpose of meetings was organizational and technical ensuring of the mission as well as coordination and formulating answers for the Self-assessment Questionnaire representing an effective tool for evaluation of compliance of the National Programme with the principles and requirements indicated in IAEA documentation.

Reimbursements of compulsory contributions and compulsory payments to the NJF pursuant to the Act on the NJF were still ongoing in 2020. They are accumulated for the purpose of the coverage of future costs for the Final Stage of reactor and non-reactor nuclear installations.

Progress in the field of development of deep repository in the SR may not be assessed as significant. Staged time table of deep geological repository preparation developed in 2019 was delivered to MH SR for an assessment at the beginning of 2020. It was incorporated in the National Report developed in compliance with the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and serves as a basis for broader discussion in task force for the appropriate part of the National Programme update. In addition, only preparation of documents for selection of contractors for the next stage of HU development ran throughout 2020.

On the basis of the aforementioned facts, it may be possible to conclude that the National Policy in the SR was executed in conformity with the Directive 2011/70/EURATOM, and management of RAW and SNF was implemented in consistency with the National Programme for the Management of SNF and RAW in the SR and with international good practice in 2020.

## List of Acronyms

BIDSF	- Bohunice International Decommissioning Support Fund
DS	- Long-term storage
EBRD	- The European Bank for Reconstruction and Development
EC	- The European Commission
EMO	- Nuclear Power Plants Mochovce
EU	- The European Union
EURATOM	- The European Atomic Energy Community
FEI	- The Faculty of Electrical Engineering and Information Technology of Slovak University of Technology in Bratislava
FS LRAW	- nuclear installation: „The Final Treatment Centre for Liquid RAW“
HU	- The Deep repository
HVB	- Main production unit
IAEA	- International Atomic Energy Agency
IRAW	- Institutional Radioactive Waste
IS RAW	- Integral storage of RAW
JAVYS, a. s.	- Nuclear and Decommissioning Company, joint stock company
KPV	- Conceptual Decommissioning Plan
KV	- Complex test
LLW	- Low-Level Radioactive Waste
LRAW	- Liquid Radioactive Waste
MH SR	- The Ministry of Economy of the Slovak Republic
MSVP	- Interim Spent Fuel Storage Facility
MŽP SR	- The Ministry of Environment of the Slovak Republic
NI	- Nuclear Installation
NJF	- The National Nuclear Fund
NPP	- nuclear power plant
NR RAW	- The National Repository for Radioactive Waste
NRA SR	- The Nuclear Regulatory Authority of the Slovak Republic

PDS	- casings of Long-term storage
PHA SR	- The Public Health Authority of the Slovak Republic
PKV	- Precomplex test
PMU	- The Project Management Unit
RAW	- Radioactive Waste
RMNP	- Radioactive material of unknown origin
SE, a. s.	- Slovak Power Plants, joint stock company
SIEA	- The Slovak Innovation and Energy Agency
SNF	- spent nuclear fuel
SR	- The Slovak Republic
SRAW	- Solid Radioactive Waste
STU	- The Slovak University of Technology
THERAMIN	- project entitled „Thermal Treatment for Radioactive Waste Minimization and Hazard Reduction”
TK	- Transport Container
TSU RAW	- nuclear installation: „Technology for Treatment and Conditioning of RAW“
ÚJV	- The Institute for Nuclear Research, Czech Republic
VBK	- Fiber concrete container
VLLW	- Very Low-Level Radioactive Waste
ZČJE	- Final Stage of Nuclear Power Engineering
ZFK	- Facility for fixation of sludges